

## REMARKS

Claim 24 is amended and new Claim 48 is added to particularly point out that the directional-position data is derived from the detected direction of arrival of a received given communication signal. The Specification is amended at pages 16-17 to be consistent with the amendment of these claims.

The addition of new Claim 48, the amendment of Claim 24 and the amendment of the Specification at pages 16 and 17 are supported by the disclosure of FIG. 1 and block 52 of FIG. 4 of the Drawing, prior Claims 24 and 25 and the Specification at page 16, line 25 to page 17, line 17.

The application now includes Claims 1-27, and 34-40 and 48.

### ***Claim Rejections - 35 USC §103***

The rejection of Claims 1, 2, 6, 7, 9-17, 19-21, 24-27 and 38-40 under 35 USC 103(a) as being unpatentable over Talaie in view of Gasbarro is respectfully traversed for at least the following reasons:

Claim 1 is patentable over Talaie in view of Gasbarro because said references neither disclose nor suggest that:

- the received communication signals be relayed immediately to only those of the identified destination terminals to which immediate relaying is authorized in accordance with a determination made by processing identification codes detected in received communication signals in combination with stored relay-authorization-and-priority data for a plurality of user terminals having respective identification codes.

After acknowledging that both Talaie and Gasbarro teach determining priority for transmission upon the priority of only the sender, the Examiner asserted:

“Although Gasbarro teaches that priority is applied to the transmission of messages, it is obvious to one of ordinary skill in the art that the same concept can

be applied to assigning a priority for receiving messages or transmissions. Therefore it would have been obvious to one of ordinary skill in the art to modify the invention of Talaie to include priority in receiving transmissions, as taught by Gasbarro, in order to allow members of high priority, such as leaders, to receive transmissions before general members. This modification would provide a more efficient way to route and schedule transmissions by the satellite.”

In rebuttal, it is submitted that the Examiner’s explanation in support of his above-quoted assertion of obviousness is not reasonable because:

- neither Talaie nor Gasbarro suggests any motivation for assigning a priority for receiving transmissions,
- Gasbarro does not teach priority in receiving transmissions, as asserted by the Examiner, and
- the advantage of efficiency is merely an advantage derived in hindsight for a modification that is not suggested by the prior art.

Claims 2, 6, 7, 9-17 and 19-21 ultimately depend from Claim 1 and thereby are patentable over Talaie in view of Gasbarro for at least the same reasons as set forth above for arguing the patentability of Claim 1 over Talaie in view of Gasbarro.

Further regarding Claim 7, Talaie does not teach the following limitation:

- recording data indicative of the performance of a relay terminal with respect to the timing of relaying received communication signals in relation to the time of receipt of the respective communication signals by the relay terminal..

The Examiner cited paragraph 35 of Talaie as teaching this limitation. However, there does not appear to be anything in either paragraph 35, or FIG. 3, which is referenced in paragraph 35, that appears to be related to this limitation. The Examiner is requested to explain his reasons for citing paragraph 35.

Further regarding Claims 10, 11 and 34, Gasbarro does not teach the following two limitations:

- storing a library of algorithms and parameters for executing a plurality of frequency-hopping patterns, and
- selecting algorithms and parameters from a library thereof that cause different frequency-hopping patterns to be applied for each simultaneous receipt and relay of communication signals.

The Examiner cited paragraph 56 of Gasbarro as teaching these limitations. However, the only portion of paragraph 56 that could be even remotely related to these limitations is as follows:

“The personal digital assistants (e.g., 104) can be programmed to frequency hop according to a predefined frequency-hopping scheme over N number of channels, N being an integer.”

There is no suggestion in paragraph 56 of either storing a library of algorithms and parameters or causing different frequency-hopping patterns to be applied for each simultaneous receipt and relay of communication signals. The Examiner is requested to explain his reasons for citing paragraph 56.

Further regarding Claims 12, 13 and 35, Gasbarro does not teach the following limitation:

- causing respectively different frequency-hopping patterns to be applied to acquisition, identification and payload segments of relayed communication signals.

The Examiner cited paragraph 56 of Gasbarro as teaching this limitation. However, the only portion of paragraph 56 that could be even remotely related to this limitation is as follows:

“The personal digital assistants (e.g., 104) can be programmed to frequency hop according to a predefined frequency-hopping scheme over N number of channels, N being an integer.”

There is no suggestion in paragraph 56 of causing respectively different frequency-hopping patterns to be applied to acquisition, identification and payload segments of

relayed communication signals. The Examiner is requested to explain his reasons for citing paragraph 56.

Further regarding Claim 14, Gasbarro does not teach the following limitation:

- simultaneously relaying a plurality of communications signals and for applying a different frequency-hopping pattern to each simultaneously relayed communication signal.

The Examiner cited paragraph 56 of Gasbarro as teaching this limitation. However, the only portion of paragraph 56 that could be even remotely related to this limitation is as follows:

“The personal digital assistants (e.g., 104) can be programmed to frequency hop according to a predefined frequency-hopping scheme over N number of channels, N being an integer.”

There is no suggestion in paragraph 56 of applying a different frequency-hopping pattern to each simultaneously relayed communication signal. The Examiner is requested to explain his reasons for citing paragraph 56.

Further regarding Claim 16, Gasbarro does not teach the following limitations:

- deriving directional-position data associated with a given originator terminal from an acquisition segment of a burst of a communication signal received from the given said originator terminal, and
- immediately defining a beam path in accordance with the derived directional-position data to enable receipt of the remaining portion of the received signal burst within the defined beam path.

The Examiner cited paragraphs 62 and 60 of Gasbarro as teaching these limitations. However, the only portion of paragraphs 62 and 60 that could be even remotely related to these limitations is the following portion of paragraph 62:

“The router 154 receives communications (e.g., location data, text messages) through the antenna 170, receiver 168, switch 164 and an analog-to-digital converter (A/D) 172.”

There is no suggestion in paragraphs 62 and 60 of deriving directional-position data from an acquisition segment of a burst received from an originator terminal and immediately defining a beam path in accordance with the derived directional-position data to enable receipt of the remaining portion of the received signal burst within the defined beam path. It is more reasonable to conclude from paragraphs 62 and 60 in view of paragraph 56 that the beam path was defined from location data received and last updated prior to receipt of the burst. The Examiner is requested to explain his reasons for citing paragraphs 62 and 60.

Further regarding Claim 17, Gasbarro does not teach the following limitation:

- transmitting an error-corrected version of said received signal burst back to said given originator terminal within the defined beam path.

The Examiner cited paragraph 56 of Gasbarro as teaching this limitation. However, the only portion of paragraph 56 that could be even remotely related to this limitation is as follows:

“In one example, a location update message is provided by a personal digital assistant 104. The message contains a geographic location, expressed in a standard set of coordinates, a unique identification string for the personal digital assistant 104, and any necessary error coding or routing information.”

There is no suggestion in paragraph 56 of transmitting an error-corrected version of a received signal burst back to the terminal from which the burst originated. The Examiner is requested to explain his reasons for citing paragraph 56.

Amended Claim 24 is unobvious over the combination of Talaie and Gasbarro for at the least the following reasons:

These two references neither teach nor suggest the following limitations:

- detecting the direction of arrival of the received given communication signal by processing portions of the given signal received prior to detecting identification codes in the received given signal, and
- deriving directional-position data associated with the given originator terminal from said detected direction of arrival of the given received communication

signal.

The Examiner cited paragraph 35 of Talaie as teaching the limitation of “processing the derived directional-position data associated with the given originator terminal to define a beam path for communications with the given originator terminal”, as recited in the last paragraph of Claim 24, and further cited paragraphs 55 and 57 of Garbarro as teaching the limitation of “deriving directional-position data associated with the given originator terminal by processing portions of the given signal received from the said originator terminal prior to detecting identification codes in the received signal”, as recited in prior Claim 24.

Paragraph 56 of Glasbarro describes a geographic location as being “expressed in a standard set of coordinates”. It is reasonable to conclude from paragraphs 55, 56 and 57 that any directional position data used for a defining beam path for receiving a signal in Glasbarro’s system was derived from location data received and stored prior to receipt of the received communication signal, instead of from the detected direction of arrival of the received communication signal, as recited in amended Claim 24.

Claim 25 is unobvious over the combination of Talaie and Gasbarro for at the least the following reasons:

These two references neither teach nor suggest the following limitations:

- deriving directional-position data associated with a given originator terminal from an acquisition segment of a burst of a communication signal received from the given said originator terminal, and
- immediately defining a beam path in accordance with the derived directional-position data to enable receipt of the remaining portion of the received signal burst within the defined beam path.

The Examiner cited paragraphs 55 and 57 of Glasbarro as teaching the first of these two limitations and cited paragraph 35 of Talaie and paragraph 60 of Glasbarro as teaching the second of these two limitations. However, the only portion of these four paragraphs that could be even remotely related to these limitations is the following portion of paragraph 57:

“At each receiving personal digital assistant (e.g., 106), the signal is processed to produce updated position data for the transmitting personal digital assistant 104. This processing can include filtering and demodulating the signal, as well as decrypting the transmitted location update message and identifying the originating personal digital assistant. Once it has been extracted from the received signal, the location update message is stored in memory and provided to a processor within the personal digital assistant (e.g., 106). The processor provides appropriate input to an associated display to update the position of the originating personal digital assistant 104.”

There is no suggestion in these four paragraphs of deriving directional-position data from an acquisition segment of a burst received from an originator terminal and immediately defining a beam path in accordance with the derived directional-position data to enable receipt of the remaining portion of the received signal burst within the defined beam path. The Examiner is requested to explain his reasons for citing paragraphs 55, 57 and 60 of Gasbarro and paragraph 35 of Talaie.

Claim 26 is unobvious over the combination of Talaie and Gasbarro for at the least the following reasons:

Claim 26 depends from Claim 25 and is unobvious over these two references for the same reasons as set forth above for arguing the patentability of Claim 25 over the combination of Talaie and Gasbarro.

These two references neither teach nor suggest the following limitation:

- transmitting an error-corrected version of said received signal burst back to said given originator terminal within the defined beam path.

The Examiner cited paragraph 56 of Gasbarro as teaching this limitation. However, the only portion of paragraph 56 that could be even remotely related to this limitation is as follows:

“In one example, a location update message is provided by a personal digital assistant 104. The message contains a geographic location, expressed in a standard set of coordinates, a unique identification string for the personal digital assistant 104, and any necessary error coding or routing information.”

There is no suggestion in paragraph 56 of transmitting an error-corrected version of a received signal burst back to the terminal from which the burst originated. The Examiner is requested to explain his reasons for citing paragraph 56.

Claim 27 is unobvious over the combination of Talaie and Gasbarro for at the least the following reasons:

These two references neither teach nor suggest the following limitations:

- deriving directional-position data associated with a plurality of originator terminals from acquisition segments of bursts of respective communication signals simultaneously received from the plurality of originator terminals, and
- transmitting error-corrected versions of said received signal bursts back to the plurality of originator terminals within beam paths respectively defined in accordance with the derived directional-position data.

The Examiner cited paragraph 56 of Glasbarro as teaching the first of these two limitations and cited paragraph 35 of Talaie as teaching the second of these two limitations of Claim 27. There is no suggestion in these two cited paragraphs of deriving directional-position data from an acquisition segment of a burst received from an originator terminal and transmitting an error-corrected version of a received signal burst back to the terminal from which the burst originated. The Examiner is requested to explain his reasons for citing paragraph 56 of Gasbarro and paragraph 35 of Talaie.

Claim 36 is unobvious over the combination of Talaie and Gasbarro for at the least the following reasons:

These two references neither teach nor suggest the following limitation:

- applying respectively different frequency-hopping patterns to acquisition, identification and payload segments of relayed communication signals.

The Examiner cited paragraph 56 of Gasbarro as teaching this limitation of Claim 36. However, the only portion of paragraph 56 that could be even remotely related to this limitation is as follows:

“The personal digital assistants (e.g., 104) can be programmed to frequency hop according to a predefined frequency-hopping scheme over N number of channels, N being an integer.”



There is no suggestion in paragraph 56 of causing respectively different frequency-hopping patterns to be applied to acquisition, identification and payload segments of relayed communication signals. The Examiner is requested to explain his reasons for citing paragraph 56.

Claims 38-40 are unobvious over Talaie and Gasbarro for at the least the following reasons:

Claims 38-40 are directed to user terminals rather than relay terminals. The features of Talaie and Gasbarro that the Examiner asserted were taught by these two references are features of a relay terminal but not features of a user terminal.

Claim 38 is unobvious over the cited combination of references because said references neither disclose nor suggest:

- a user terminal that includes a plurality of receivers for simultaneously receiving communication signals from respectively different sources, or
- a user terminal that includes a router for routing the received communication signals to at least one output device in accordance with a predetermined priority, as required by Claim 38.

Claim 39 is unobvious over Talaie and Gasbarro because Claim 39 depends from Claim 38 and also because said references neither disclose nor suggest:

- a user terminal in which a plurality of receivers are respectively adapted for receiving at least two different communication signals among one or more network-specific signals, common information signals, alert signals and paging signals, or
  - a user terminal in which a predetermined priority for routing received communication signals to at least one output device is established among one or more network-specific signals, common information signals, alert signals and paging signals,
- as further required by Claim 39.

Claim 40 is unobvious over Talaie and Gasbarro because Claim 40 depends from Claim 38 and also because said references neither disclose nor suggest:

- a user terminal having one receiver that is adapted for receiving a given signal transmitted directly from another user terminal and another receiver that is adapted for receiving the given signal relayed by a relay terminal, as required by Claim 40.

### ***Claim Rejections - 35 USC §102***

The rejection of Claim 37 under 35 USC 102(e) as being anticipated by Talaie is respectfully traversed for at least the following reasons:

Talaie neither discloses nor suggests the following limitation:

- a user terminal that is adapted for simultaneously receiving both a given signal transmitted directly from another user terminal and the given signal relayed by a relay terminal.

The Examiner cited paragraph 23 and FIG. 2 of Talaie as teaching this limitation. However, this limitation is not taught by either paragraph 23 or FIG. 2. Nor is this limitation suggested in any other portion of Talaie.

In FIG. 2, the only user terminals that are shown as receiving a signal are the receiving devices 16 that receive a signal from a relay device 10; and none of these receiving devices 16 are shown as receiving any signal that is transmitted directly from another user terminal, such as a transmitting device 18.

The pertinent disclosure of paragraph 23 merely states:

“A transmitting device 18 in a first beam 14 transmits a signal to the relay device 10, which in turn retransmits the signal to one or more receiving devices 16. The relay device 10 may transmit the signal directly to a receiving device 16 (e.g., from a first handset to a satellite 10a to a second handset); or, the relay device 10 may transmit the signal to a receiving device indirectly (e.g., from a first handset to a satellite 10a to a ground station 10b to a satellite 10a to a second handset).”

The Examiner is requested to explain his reasons for citing paragraph 23 and FIG. 2.

***Allowable Subject Matter***

The allowance of Claims 22 and 23 and the indication that Claims 3-5, 8 and 18 would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claim is gratefully acknowledged.

Because it is believed that Claim 1, from which Claims 3-5, 8 and 18 ultimately depend, is allowable for the reasons set forth above, Claims 3-5, 8 and 18 are not being rewritten in independent form at this time.

***Conclusion***

Applicant does not necessarily agree with any of the Examiner's comments regarding the applicability of the cited references to any of the claims. However, in view of the reasons presented herein for traversing the rejections of the claims, applicant is not presenting additional arguments at this time. Applicant reserves the right to present additional arguments for traversing the present and any future rejections of the claims.

Reconsideration and allowance of Claims 1-27, 34-37 and 48 are respectfully requested.

Respectfully submitted,

Dated 7/17/09



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